

WHAT IS CLAIMED IS:

1. A medical system, comprising:

a catheter comprising a catheter distal end;

5 an elongated sheath comprising an open sheath distal end, an internal lumen, and one or more fluid exit ports located on said sheath distal end, wherein said internal lumen is configured to house said catheter, and said one or more fluid exit ports are configured to perfuse fluid in a substantially distal direction over said catheter distal end when said catheter distal end protrudes from said open sheath distal end.

10 2. The medical system of claim 1, wherein said one or more fluid exit ports comprises an annular aperture in fluid communication with said internal lumen, said annular aperture being formed between an outer surface of said catheter distal end and a distal tip of said internal lumen when said catheter distal end protrudes from said open sheath distal end.

15 3. The medical system of claim 1, wherein an inner surface of said sheath distal end comprises one or more skives in fluid communication with said internal lumen, and said one or more fluid exit ports are in fluid communication with said one or more skives.

20 4. The medical system of claim 3, wherein said inner surface of said sheath distal end substantially forms a seal with an outer surface of said catheter distal end.

5. The medical system of claim 1, wherein said one or more fluid exit ports are located on an outer surface of said sheath distal end and extend through a wall of said sheath distal end in fluid communication with said internal lumen, and are disposed at a distally facing oblique angle to a longitudinal axis of said sheath distal end.

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6. The medical system of claim 1, wherein a wall of said sheath distal end comprises one or more axially disposed fluid lumens, and said one or more fluid exit ports are located on a distally facing edge of said sheath distal end in fluid communication with said one or more fluid lumens.

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7. The medical system of claim 6, wherein said one or more axially disposed fluid lumens are in fluid communication with said internal lumen.

8. The medical system of claim 1, wherein said one or more fluid exit ports comprise a plurality of fluid exit ports.

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9. The medical system of claim 1, wherein said catheter is an ablation catheter having a distally mounted ablation electrode.

10. The medical system of claim 1, further comprising a catheter locking mechanism configured for axially fixing said catheter relative to said sheath.

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11. The medical system of claim 1, wherein said catheter locking mechanism comprises an annular ridge located on one of said catheter and said sheath, and an annular indentation located on the other of said catheter and said sheath, said annular ridge and said annular indentation configured for engaging each other when said catheter is advanced through  
5 said internal lumen of said sheath.

12. The medical system of claim 1, further comprising an irrigation fluid system in fluid communication with said one or more exit ports.

10 13. The medical system of claim 12, wherein said irrigation fluid system comprises a source of irrigation fluid and a pump for conveying said irrigation fluid under pressure to said one or more fluid exit ports.

14. The medical system of claim 13, wherein said irrigation fluid system comprises a  
15 source of another fluid that can be conveyed under pressure to said one or more fluid exit ports.

15. The medical system of claim 1, wherein a proximal end of said sheath comprises a hemostasis valve.

20 16. The medical system of claim 1, wherein said sheath distal end is steerable.

17. A medical guide sheath, comprising:  
an elongated sheath body having an open distal end;

an internal lumen formed within said sheath body and being configured for housing a catheter; and

one or more fluid exit ports located on said open distal end and being configured for perfusing fluid in a substantially distal direction over a distal end of said catheter when said

5 catheter distal end protrudes from said open distal end.

18. The medical guide sheath of claim 17, wherein said open distal end is configured, such that said one or more fluid exit ports form an annular aperture that is in fluid communication with said internal lumen, said annular aperture being formed between an outer  
10 surface of said catheter distal end and a distal tip of said internal lumen when said catheter distal end protrudes from said open distal end.

19. The medical guide sheath of claim 17, wherein an inner surface of said open distal end comprises one or more skives in fluid communication with said internal lumen, and said one  
15 or more fluid exit ports are in fluid communication with said one or more skives.

20. The medical guide sheath of claim 19, wherein said inner surface of said open distal end is configured for substantially forming a seal with an outer surface of said catheter distal end when said catheter distal end is disposed within said internal lumen.

20 21. The medical guide sheath of claim 17, wherein said one or more fluid exit ports are located on an outer surface of said open distal end and extend through a wall of said open

distal end in fluid communication with said internal lumen, and are disposed at a distally facing oblique angle to a longitudinal axis of said sheath distal end.

22. The medical guide sheath of claim 17, wherein a wall of said open distal end  
5 comprises one or more axially disposed fluid lumens, and said one or more fluid exit ports are located on a distally facing edge of said open distal end in fluid communication with said one or more fluid lumens.

23. The medical guide sheath of claim 22, wherein said one or more axially disposed  
10 fluid lumens are in fluid communication with said internal lumen.

24. The medical guide sheath of claim 17, wherein said one or more fluid exit ports comprises a plurality of fluid exit ports.

15 25. The medical guide sheath of claim 17, wherein said catheter is an ablation catheter having a distally mounted ablation electrode.

26. The medical guide sheath of claim 17, further comprising a hemostasis valve mounted on a proximal end of said sheath body.

20 27. The medical guide sheath of claim 17, wherein said open distal end is steerable.

28. A medical guide sheath, comprising:

an elongated sheath body having an open distal end;  
an internal lumen formed within said sheath body; and  
a plurality of skives formed on an inner surface of said open distal end, said plurality of skives being in fluid communication with said internal lumen.

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29. The medical guide sheath of claim 28, wherein said open distal end comprises a wall having a distally facing surface, and said plurality of skives extends proximally from said distally facing surface.

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30. The medical guide sheath of claim 28, further comprising a proximally mounted fluid entry port in fluid communication with said internal lumen.

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31. A medical guide sheath, comprising:  
an elongated sheath body having an open distal end;  
an internal lumen formed within said sheath body; and  
a plurality of fluid exit ports located on an outer surface of said open distal end, said plurality of fluid exit ports extending through a wall of said open distal end in fluid communication with said internal lumen, and are disposed at a distally facing oblique angle to a longitudinal axis of said open distal end.

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32. The medical guide sheath of claim 31, further comprising a proximally mounted fluid entry port in fluid communication with said internal lumen.

33. A medical guide sheath, comprising:

an elongated sheath body having an open distal end, said open distal end comprising a wall and a distally facing edge;

an internal lumen formed within said sheath body;

5 a plurality of fluid lumens axially disposed within said open distal end wall; and

a plurality of fluid exit ports located on said distally facing edge in fluid communication with said plurality of fluid lumens.

34. The medical guide sheath of claim 33, wherein said plurality of axially disposed  
10 fluid lumens is in fluid communication with said internal lumen.

35. The medical guide sheath of claim 33, further comprising a proximally mounted fluid entry port in fluid communication with said plurality of fluid lumens.